COLOR AND LIGHTING SCHEMES FOR A HOSPICE FACILITY AIMED AT
IMPROVING THE RESIDENTS’ QUALITY OF LIFE

A graduate project submitted in partial fulfillment of the requirements
for the Degree of Master of Science in
Family and Consumer Sciences

by
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DEDICATION

To my grandpa, Fred Feikema, he had an unwavering devotion to God. He wanted his children and grandchildren to have the opportunity for higher education that he was never able to get. I am grateful to inherit his artistic ability in the arts.
ACKNOWLEDGEMENT

I would like to dedicate and send the utmost appreciation for this graduate project to my parents: to my father, Dale Feikema, and to my mother, Carolyn Feikema, who have made it possible for me to pursue my passion for interior design. Without their love, encouragement, and support this thesis would not have been attainable. Thank you!

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ABSTRACT

COLOR AND LIGHTING SCHEMES FOR A HOSPICE FACILITY AIMED AT IMPROVING THE RESIDENTS’ QUALITY OF LIFE

by

Rachel Feikema

Master of Science in

Family and Consumer Sciences

Color and lighting psychologies are a common stressor in healthcare facilities. Every human being is sensitive to color and light and it affects their mood. This graduate project focused on using these elements to try to improve the quality of life for people at their most vulnerable. The scope of this project was to design three color and lighting schemes for a hospice facility aimed at improving the residents’ quality of life. The literature reviewed examined color and lighting psychologies to create solutions for patient rooms in hospice residences. This graduate project suggests three proposed paint colors in three identical patient rooms. Literature shows that all colors, including tints, shades, and tones have symbolism. Both elements of color and lighting have a direct impact in creating quality of life environments for healthcare environments such as hospices. These elements can also be used in any environment in which humans work, live, and visit.
CHAPTER ONE

INTRODUCTION

“Our attitudes control our lives. Attitudes are a secret power working twenty-four hours a day, for good or bad. It is of paramount importance that we know how to harness and control this great force.”

-Tom Blandi (2007)

Hospice patients nearing death deserve to feel comfort in their final days. A well certified hospice provides “management of a terminal illness that focuses on symptom control and support rather than cure and life prolongation” (Billings, 1998, 73). Hospice, in the earliest days, was a concept rooted in the centuries-old idea of offering a place of shelter and rest, or hospitality to weary and sick travelers on a long journey (American Cancer Society, 2009). In 1967, the term ‘hospice’ was coined for specialized care meant to ease the medical conditions of terminal patients during the process of dying. In today’s hospices professionals and volunteers manage the physical and spiritual circumstances of each patient and their families.

A hospice designed with natural and cultural associations of color and relaxing and peaceful lighting can improve an individual’s quality of life and meet individual needs in the final days of life when comfort is of utmost importance. The purpose of this project was to develop a hospice design that considers evidence based color and lighting psychologies to improve patients’ quality of life. The literature reviewed examined color and lighting psychologies and the ability to create solutions for terminally ill patients living in hospice residences in their final months.
Scope of Project

The scope of the project was to design three color and lighting schemes for a hospice facility aimed at improving the residents’ quality of life. The selections for wall colors and lighting types are presented through three-dimensional renderings. Lighting design includes selection of fixtures and ideal placement, along with suggestions for maximizing daylight.

Definition of Terms

1. **Color** is a wavelength of light or a visual observation that enables one to distinguish objects and is a powerful design element (Read, 2003).
2. **Color psychology** is a study of color and how humans interact with it in their environments. Research of color psychology also includes experiments and “evaluated” responses from humans (Whitfield & Wiltshire, 1990).
3. **Design** is a concept or process of designing the interior of a room or building (Pedersen & Burton, 2005).
4. **Hospice** has been defined as a resting-place that would house travelers from a long journey. In the year 2011, the same term is used for a ‘multidimensional and interdisciplinary package that provides rest for weary patients and their families’ (Marrelli, 2005, 2-3).
5. **Lighting** is both illumination and artificial equipment used to supply lighting (Garris, 2005).
6. **Lighting psychology** describes the way in which light can either have a positive or
negative affect or influence on an individual’s physiological response in homes, offices, and workspaces (Kaplan and Benya, 2004).

7. **Quality of life** is an individual’s personal satisfaction with cultural associations under their state of living (Bretscher et al, 1999).

8. **Volatile organic compounds (VOC)** are chemical fumes emitted from paints, which can affect a human’s health and the environment. VOC’s are regulated for interior environments (Takeshita, 2012).

9. **Energy efficient lighting** is also known as luminous efficiency. Sources of light such as compact fluorescent lights (CFL), and light-emitting diodes (LED) can create substantially less energy (Horowitz, 2001).

**Summary**

The scope of the project was to design three color and lighting schemes for a hospice facility, which aimed at improving the residents’ quality of life. The selections for wall colors and lighting types are presented through three-dimensional renderings.
CHAPTER TWO

REVIEW OF LITERATURE

“There is tremendous strength that is growing in the world through
sharing together, praying together, suffering together and working together.”

-Mother Theresa-

Dame Cicely Saunders introduced the first hospice in the United States in 1967. Forman, Kitzes, Anderson, & Sheehan (2003) noted Saunders first hospice, located in New Haven, Connecticut, was called St. Christopher’s Hospice. Saunders, originally a nurse, later became a medical social worker where she met her inspiration, David Tasma, a cancer patient dying from terminal cancer. Saunders and Tasma discussed ways to ease pain and to prepare for the end in a hospice, rather than dying in a hospital ward. Saunders’ lectures have inspired the creation of ideal hospices around the world and she is known for the modern hospice movement (Forman et al., 2003).

The aim for any hospice is to give dignity and comfort to a patient’s quality of life without continuing medical treatment (Tierney, Horton, Hannan, & Tierney, 1998). According to Stevenson and Bramson (2009), hospices have thrived in the United States as a free system. Most hospices are financed by private organizations in their local areas. These organizations can include churches, civil entities, and even private donors.

Quality of Life

Bretscher, Rummans, Sloan, Kaur, Bartlett, Borkenhagen, and Loprinzi (1999) stated that death and dying are an unavoidable event in every human life. Although little information about death and dying from a patient’s viewpoint has been studied (Tang &
McCorkle, 2002), it is clear that with adequate palliative care, death and dying can be a less stressful experience. McMillan and Mahon (1994) studied psychological well-being, physical welfare, and symptom control as three areas to measure patient welfare in a hospice.

A longitudinal research study for terminal cancer patients living in an end-of-life care facility found they could add additional years to patients’ lives by enhancing the quality of the facility (Tang & McCorkle, 2002). Tang, Aaronson, & Forbes (2004) found that spiritual care, family support, control of pain, and the performance of the hospice are significant factors in patients’ quality of life.

A hospice environment provides greater support for patients as their physical needs increase and often provides this at little to no cost to the patient (Weitzner, 1999). The families of patients without ‘in home’ care or a hospice setting reported this had a negative effect on the patient’s quality of life (anonymous, 2009). In contrast, patients’ health improves in a hospice setting. Cartwright, Miller and Volpin (2008) wrote that the relationships between resident staff and hospice patients seemed to give the patient a greater quality of life. Cartwright et al. (2009) also stated that managing the best relationship between patients and hospice staff is important in achieving the best quality of life for patients. The attributes associated with a positive resident and staff relationship includes clear communication, knowledgeable staff, and shared expectations about a resident’s life.
Color Psychology

Colors have intrigued humans since the dawn of mankind. Pavey (2003) studied how the use of color dates back to the early Egyptians (1550 B.C.) who believed that without light colors could not exist. Aristotle created multiple colors by mixing two colors together. During the Middle Ages Paracelsus hypothesized that every color had a philosophy for healing. Isaac Newton (1642-1727) observed that when light passed through a prism seven different colors appeared; these colors are now called rays of the spectrum.

Color can influence an individual’s physiological response and give them a feeling of well-being (Mahnke, 1996). In an environment such as a hospital, the use of color may enhance a patient’s quality of life. Visual elements are designed throughout healthcare environments ranging from the color on the walls to lighting to selective furniture.

Color meaning is established in the process of color corresponding with a reaction of the perceiver (Mahnke, 1996). Interior designers design rooms using color related to life experiences (Feisner, 2006, 131-132) and color is considered informative as a way to understand the meaning of a designed environment (Mahnke, 1996). Healthcare and color have been researched and linked by positive and negative correlations in various cultural contexts and designers have found healthcare facilities to be more challenging to design because of patients’ sensitivity to colors as they relate to their culture - individual life experiences can create different meanings for natural associations (Feisner, 2006, 131-132).
According to Meerwein, Rodeck, and Mahnke (2007), a patient’s healing treatments include a relationship between mental stability and optimistic attitudes to boost healing through the significance of color. Interior designers should consider all patients, family members, volunteers, visitors, and staff when using colors for various purposes. Interior designers should also research color meaning before applying the color in interiors so that the end result will positively reflect all cultures, especially in healthcare environments (Meerwein, et. al, 2007).

Podolsky (2004) stated that human moods are influenced by color. In table 2.1, colors are noted by moods, emotions, and other factors.

<table>
<thead>
<tr>
<th>Color</th>
<th>Source of Primitive Color “Bath”</th>
<th>Chief Auxiliary Influence</th>
<th>Contributing Influences</th>
<th>Emotional State Invoked</th>
<th>“Prime Factor” of Color</th>
<th>Associated Factors</th>
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<tbody>
<tr>
<td>BLACK</td>
<td>Night</td>
<td>Charcoal</td>
<td>Smoke, black rocks</td>
<td>Sleep</td>
<td>Negation</td>
<td>Gloom, depression</td>
</tr>
<tr>
<td>WHITE</td>
<td>Fair-weather clouds</td>
<td>Snow</td>
<td>White sand</td>
<td>Awareness</td>
<td>Affirmation</td>
<td>Uplift, zest</td>
</tr>
<tr>
<td>GRAY</td>
<td>Rain</td>
<td>Fog</td>
<td>Stormy seas</td>
<td>Decadence</td>
<td>Death</td>
<td>Old age</td>
</tr>
<tr>
<td>BROWN</td>
<td>Earth</td>
<td>Autumn Leaves</td>
<td>Muddy water</td>
<td>Sorrow</td>
<td>Illness</td>
<td>Melancholy</td>
</tr>
<tr>
<td>BLUE</td>
<td>Sky</td>
<td>Sea</td>
<td>Ice</td>
<td>Thought</td>
<td>Infinity</td>
<td>Spirituality</td>
</tr>
<tr>
<td>GREEN</td>
<td>Leaves</td>
<td>Clear Water</td>
<td>Springtime, plant growth</td>
<td>Sense of well-being</td>
<td>Health</td>
<td>Abundance</td>
</tr>
<tr>
<td>RED</td>
<td>Blood</td>
<td>Sunrise, Sunset</td>
<td>Lips, red rocks</td>
<td>Combat</td>
<td>Life</td>
<td>Vigor</td>
</tr>
<tr>
<td>YELLOW</td>
<td>Fire</td>
<td>Sunlight</td>
<td>Large flowers</td>
<td>Comfort</td>
<td>Happiness</td>
<td>Warmth</td>
</tr>
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Table 2.1. Wellman Chart Of Colors and their Associated Emotions: How to Charm with Color by Podolsky (2004).

Color affects everyone on a variety of levels, including changes in body chemistry. When a human looks at color it is a visual element of a designed environment, which stirs up psychological, physical, and social behaviors (Malkin,
Women and men ranging in age from their late 30’s to early 50’s were given a test after watching a play. The test answers revealed that red, orange and yellow were the most popular choices, because these colors suggest warmth and a powerful intensity. Following in popularity were gray and purple (Podolsky, 2004), suggesting associations with human tragedies.

Mahnke and Mahnke (1993) two well-known color consultants, wrote a color guide to help people effectively create color schemes in their living environments. Between the 1950’s and the 1970’s research found that nearly every one who owned a home had white walls. White walls tend to have a visual and a mental psychology on a human’s eye (Mahnke and Mahnke, 1993) and the authors affirmed that colored walls became the renewal for interior design. This guide also analyzed the uses of color and lighting in facilities such as schools, offices, and healthcare environments (Mahnke and Mahnke, 1993). Following are definitions of several colors schemes that would be useful in healthcare facilities.

1. The word monochromatic can be broken down into mono, which means one and chroma, which means color. The simple definition is using only one color (Hiller, 2008 & Holtzschue, 2011).

2. An analogous color scheme uses colors adjacent to each other on the color wheel. One color is more dominant while the other two enhance the scheme (Quiller, 2002, 54) & (Hiller, 2008).

3. Complementary colors are two colors opposite from each other on the color wheel. This scheme pattern often shows a greater balance than monochromatic and analogous schemes (Eyton, 1984).
4. The split complementary color scheme uses a color and the two adjacent to its complementary (Holtzschue, 2011).

5. A triadic scheme use three colors equally spaced apart on the color wheel. This scheme looks balanced and offers a visual contrast (Quiller, 2002, 80).

6. A tetradic (double complementary) scheme uses four colors total consisting of two sets of complementary color pairs. This scheme offers more variety than other schemes but it may be hard to balance all colors without looking distorted (Holtzschue, 2011).

Mahnke and Mahnke (1993) indicated that a designer should carefully study all color suggestions since colors have meanings and may be symbolic to a patient’s culture. For a suitable color plan in a healthcare facility they suggested some colors to provide careful consideration of visual and mental effects for each patient. Podolsky (2004) also suggests the use of either cool or warm colors depending on the function of the room. Listed below are Mahnke and Mahnke’s (1993) recommendations of colors:

1. **Corridor** colors that can be either warm or cool depending on the function of the healthcare environment. For a warm effect, authors suggest major walls be light orange, pale green, or orange-yellow. For a cooler effect, light beige may be used on one wall with the other wall pale green.

2. **Patient rooms** can have either warm or cool colors depending on the function of the healthcare environment. One way to achieve a cooler effect is to have one wall of a room be a pale green while the other three walls are a sandstone color. Other colors can be shades, tones, and tints of blue, green and purple. Warm room colors are proposed to
be pale orange on one wall and a slightly darker orange on the other three. Other proposed warm colors are peach, tints and tones of yellow, and tints of green. The authors indicated that a designer should carefully study all color suggestions. Since colors have meanings and may be symbolic to a patient's culture.

3. **Nurses’ stations** colors should promote a healthy working environment. The primary colors should include hues and tints of orange, yellow, and blue-green.

4. **Physical therapy rooms** should use the color aqua. Pale orange or yellow should be used in occupational therapy rooms.

5. **Offices** are hardworking environments; colors should be any cool colors such as green, blue, or purple.

6. **Reception areas** should focus on primary and secondary colors.

7. **Staff lounges** should reflect the staff’s preferences.

**Lighting Psychology**

Lighting presents a design challenge in healthcare environments (Kaplan & Benya, 2004). In such environments, light must allow proper visual accuracy for medical staff, patients, and volunteers. Kaplan and Benya (2004) stated that since patients are changing with their environments, lighting should too. Lighting design is constantly changing with new technologies in energy efficiency, operating costs, and aesthetics. For example Phillips, a lighting manufacturer has created high efficient task lighting for diagnostic, surgery, and patient rooms (Philips.com, 2011). Lighting needs in healthcare environments can change depending on the range of patients and procedures and a lighting designer must adapt to all types of healthcare situations. In particular, hospices
must adjust for the increasing number of patients they serve with a wide variety of needs (Kaplan & Benya, 2004).

Joseph (2006) argued that natural lighting should be widely incorporated in healthcare environments. Natural lighting is not only cost efficient but can also improve a patient’s general health and decrease the length of stay in a healthcare environment (Joseph, 2006). Joseph concluded that a combination of natural and artificial lighting could be used to improve one’s quality of life. Kaplan and Benya (2004) indicated that patients had an improved sleep rhythm and a decrease in depression when staying in healthcare environments that had natural lighting. However, patients are not the only ones who benefit from natural lighting. Hospice staff demonstrated an increased satisfaction with their jobs because of natural light exposure.

The interactions between color and lighting in hospice designs can be “utilized and applied, for the benefit of all users, from ambience to essential legal requirements such as color contrast for the visually impaired” (Dalke et al., 2006, p.350). A room with dim lighting and limited windows does not promote a positive outlook on life for the patient. A room with skylights, transom windows, and sliding glass doors to the outside provides the patient with a feeling of nature being brought indoors. In addition, natural lighting causes the patient to have a more positive outlook on his or her situation and to feel less isolated.

Summary

Through the review of literature on color psychology and lighting components of healthcare environments, it is clear that both elements are of importance to the quality of
life in a hospice environment. Incorporation of natural light and selection of colors based on studies of color psychology can help create hospice facilities that provide the best quality of life for patients while simultaneously improving the work environment for hospice staff.
CHAPTER THREE
DESIGN GUIDELINES

The scope of this project was to design three color and lighting schemes for a hospice facility aimed at improving the residents’ quality of life. The literature reviewed examined color and lighting psychologies to create solutions for patient rooms in hospice residences.

Checklist of Criteria for Color and Lighting

Creating a color scheme is critical in the overall design and functionality of a patient’s room. Listed below are some key steps in finding solutions for patient room colors. If steps are well executed, results should create a comfortable room for patients.

Color Design checklist:

1. **Gather information** - from books, magazines, journal articles
2. **Prioritize the data by choosing colors that will be considered:**
   a. Artificial lighting
   b. Mood: calm, restful, and relaxing
   c. Personal preferences: with colors or design schemes
   d. Geography and climate
3. **Deciding on color:**
   a. Warm, cool, or neutral colors
   b. Monochromatic, analogous, complementary, triadic, and tetradic color schemes
   c. Select colors based on the color wheel
4. Select areas to use color:
   
a. Larger areas: floors, ceilings, and walls

b. Secondary areas: furniture, window coverings and accessories


1. What will the room be used for?

2. Will the lighting be direct, indirect, task, or background?

3. Is there enough lighting on all horizontal and vertical surfaces?

4. Will there be enough lighting to enhance certain elements on surfaces?

5. Is the lighting adequate enough for the job it was designed for?

Color Recommendations for Hospice

Hospices are like hospitals but with a ‘home like’ feeling. Here patients can have a space to call their own that provides healthy and supportive care. According to the United States Environmental Protection Agency (EPA, 2012) indoor air is three times more polluted than outdoor air and is one of the top five hazards to human health (EPA, 2012). Advances in paint technology allow the building industry to produce paints that are low in volatile organic compounds in interiors. Since the development of eco friendlier products, paint manufactures are producing paints that have no VOCs or very low VOCs. Non-toxic paints are now more durable, cost effective, and less harmful to human health and the environment. Because of the need for healthcare facilities to provide a healthy and supportive environment, low to zero volatile organic compound (VOC) paint is a must. Some very important additional benefits of low to no VOCs paints are the low odors during application, easy clean up with soap and water, and
painted areas that can be occupied sooner with less harmful chemicals to inhale ("Caring in Full Color," 2011).

Dunn Edwards' paints are economically friendly and sustainable. According to the Dunn Edwards website (2011), the USGBC awarded the LEED gold certificate to the company for its greener and more efficient paint factory. In a world where design is becoming greener, Dunn Edwards operates to protect the physical environment by eliminating waste, recycling, and limiting and regulating VOC solvents in interior paints. Researchers at Dunn Edwards strive to provide customers with the highest eco-efficient paint and coatings with lowest levels of VOC solvents. All of Dunn Edwards paints contain a zero toxin otherwise known as propylene glycol, which is a non-toxic compound. These paints have low VOC solvent levels and are resilient to wear, and staining and abrasions on surfaces, and improve energy efficient lighting (Dunn Edwards, 2011).

In 1995, Sherwin Williams launched its first zero VOC paint called HealthSpec. HealthSpec introduced a full range of environmentally friendly paints. Every product in this line is based on ‘green’ requirements that include limits on VOCs, toxic fumes, and chemical content. Since 1995 Sherwin Williams has created innovations that make a difference in the environment including the first plastic paint containers and paint cans made from one hundred percent post-consumer recycled materials (Sherwin Williams Co., 2011).

Benjamin Moore, another leading paint manufacturer, began producing low VOC paints in 2000. (Benjamin Moore, 2011). This company has excelled in manufacturing low VOC paints.
Lighting Recommendations

There are three types of lighting used in residential and commercial settings: incandescent, fluorescent, and high-intensity discharge lamps (Linton, 1985). A combination of these lighting types used by lighting designers are put in living environments to achieve white lighting and are almost as effective as natural lighting from sunlight (Phillips, 1964). Gordon (2003) affirmed that no artificial light is as good as natural lighting. Phillips (1964) and Gordon (2003) also noted that white light could be difficult to achieve because light emits at different spectra. As seen in Table 3.1 incandescent, fluorescent, and high-intensity discharge lamps suggest which lamp sources are preferred in a living environment (Linton, 1985).

<table>
<thead>
<tr>
<th>Types of Lighting</th>
<th>Cool White</th>
<th>Deluxe Cool White</th>
<th>Warm White</th>
<th>Deluxe Warm White</th>
<th>Soft White/Natural</th>
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<tr>
<td>Efficacy</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Lamp Appearance</td>
<td>White</td>
<td>White</td>
<td>Yellowish white</td>
<td>Yellowish white</td>
<td>Purplish white</td>
</tr>
<tr>
<td>effect on neutral surface</td>
<td>Neutral to moderately cool</td>
<td>Neutral to moderately cool</td>
<td>Warm</td>
<td>Warm</td>
<td>Warmish pinkish</td>
</tr>
<tr>
<td>Effect on “atmosphere”</td>
<td>Red</td>
<td>N/A</td>
<td>Red, blue, green</td>
<td>Blue</td>
<td>Green, blue</td>
</tr>
</tbody>
</table>
Table 3.1. Created data available from *Color Model Environments* by Linton, 1985, 102-103.

Gordon (2003) affirmed Linton’s (1985) suggestions for interior lighting. However, certain color wavelengths from Table 3.1 can change colors on walls, fabrics, textures, and other design elements in a living environment (Linton, 1985).

1. **Incandescent** light emits smooth lines and curves with warm tones. It tends to have a natural glow and is more aesthetically pleasing although the colors blue and green tend to be grayed. According to Phillips (1964) this light source has a calming and satisfactory effect on any living environment.

2. **Fluorescent** light sources vary from medium to high illumination. Light that is emitted produces the standard white light and ‘bleaches out’ color on natural surfaces like walls, floors and ceilings. However the standard white light produces cool and warm tones while colors green and blue are grayed out. Phillips (1964) stated that this type of lighting type would also be pleasing in a healthcare environment.

3. **High-intensity discharge lamps** contain different metals in bulbs in order to emit a broad range of color. These metal types are mercury, multi-vapors, and lucalox. Natural white light that is produced from these bulbs affects colors from yellow to purple.
Grayed out colors include red, green, and blue. Phillips (1964) does not recommend this type of lighting source in any residential living environment.

4. Phillips (1964) & Gordon (2003) agreed that ‘true’ lighting comes from nature. Natural sunlight and large windows are design elements recommended by La Torre (2006) who studied a decrease in depression and increased energy in a patient’s quality of life. If daylight and windows were not present, plants and paintings of nature proved to help a patient’s quality of life (La Torre, 2006). Pechacek, Anderson, and Locley (2008) studied positive health benefits between light and a person’s performance. These authors noted that inappropriate lighting can disturb a human’s overall well-being not only in a healthcare environment but in any environment.

Summary

Incorporation of information from literature on color and lighting psychology can help design environments that are optimal for patients’ quality of life. Additionally, information about lighting types that are appropriate for the function of the space and paint colors that have meaning will enhance the life of a patient in a hospice.
CHAPTER FOUR

COLOR AND LIGHTING SCHEMES FOR PROPOSED HOSPICE FACILITY

The scope of the project was to design three color and lighting schemes for a hospice facility aimed at improving the residents’ quality of life. Below are some proposed color and lighting schemes for a hospice facility. All drawings have been reduced to fit.

Figure 4.1

Proposed three-dimensional floor plan of two patients’ rooms in a hospice facility.
Figure 4.2. Proposed lighting in a patient’s bathroom within a hospice facility.

Figure 4.2. Proposed three-light brushed nickel vanity light placed over bathroom mirror providing efficient and effective lighting for patients. Skylights were also used to provide efficient natural lighting.

Lighting Description

Lighting Name: 3-light brushed nickel vanity light

Lighting Manufacturer: Sea Gull

Lighting Model Number: 44941BLE-962
Figure 4.3. A proposed room in a hospice facility. Summer Daffodil is the proposed wall color.

Figure 4.3. As for the color, Dunn Edwards’ Summer Daffodil, it is a soft natural tint of pure yellow. Yellow represents the brilliance of sunlight and gives patients a physical and mental sensation of warmth (Podolsky, 2004). Accessories such as lamps, pictures/picture frames, and rugs are only design suggestions. Hospice patients are encouraged to bring their personal belongings to make their rooms feel more like home.

Paint Description

Paint Manufacturer: Dunn Edwards

Paint Name: Summer Daffodil

Paint Number: DE5312
Figure 4.4. Proposed lighting in a hospice facility.

Recessed lighting proposed and transom windows placed over sleeping, dressing, and sitting areas. This combination of lighting provides efficient and effective illumination for patients.

**Lighting Description**

Lighting Name: Halo 6” Airtight IC Recessed Light Housing

Lighting Manufacturer: Halo

Lighting Model Number: H71CAT

**Lighting Trim Description**

Lighting Trim: Halo 6-in Tuscan Bronze Trim

Trim Manufacturer: Halo

Trim Model Number: 993TBZ
Figure 4.5. A proposed room in a hospice facility. Bay Shore is the proposed wall color.

Figure 4.5. As for the color, Dunn Edwards’ Bay Shore, is a soft natural shade of pure blue. Blue represents the sky and sea and gives patients a mental sensation of spirituality (Podolsky, 2004). Accessories such as lamps, pictures/picture frames, and rugs are only design suggestions. Hospice patients are encouraged to bring their personal belongings to make their rooms feel more like home.

Paint Description

Paint Manufacturer: Dunn Edwards

Paint Name: Bay Shore

Paint Number: DE5779
Figure 4.6. Proposed lighting in a hospice facility.

Recessed lighting proposed and transom windows are placed over sleeping, dressing, and sitting areas. This combination of lighting provides efficient and effective illumination for patients.

**Lighting Description**

- **Lighting Name:** Halo 6” Airtight IC Recessed Light Housing
- **Lighting Manufacturer:** Halo
- **Lighting Model Number:** H71CAT

**Lighting Trim Description**

- **Lighting Trim:** Halo 6-in Tuscan Bronze Trim
- **Trim Manufacturer:** Halo
- **Trim Model Number:** 993TBZ
Figure 4.7. A proposed room in a hospice facility. Fresh Cut Grass is the proposed wall color.

Figure 4.7. As for the color, Dunn Edwards’ Fresh Cut Grass, is a soft natural tone of pure green. Green represents clear water and gives patients a physical and mental sensation of well-being (Podolsky, 2004). Accessories such as lamps, pictures/picture frames, and rugs are only design suggestions. Hospice patients are encouraged to bring their personal belongings to make their rooms feel more like home.

Paint Description

Paint Manufacturer: Dunn Edwards

Paint Name: Fresh Cut Grass

Paint Number: DE5599
Figure 4.8. Proposed lighting in a hospice facility.

Figure 4.8. Recessed lighting proposed and transom windows placed over sleeping, dressing, and sitting areas. This combination of lighting provides efficient and effective illumination for patients.

Lighting Description

Lighting Name: Halo 6” Airtight IC Recessed Light Housing

Lighting Manufacturer: Halo

Lighting Model Number: H71CAT

Lighting Trim Description

Lighting Trim: Halo 6-in Tuscan Bronze Trim

Trim Manufacturer: Halo

Trim Model Number: 993TBZ
CHAPTER FIVE

FINAL DISCUSSION

The scope of the project was to design three color and lighting schemes for a hospice facility aimed at improving patients’ quality of life. Hospice patients nearing death deserve to feel comfort in their final days and a hospice designed with a carefully chosen color palette and thoughtful lighting techniques can improve residents’ quality of life and meet their needs in the final days of life (Billings, 1998, 37). Literature reveals design ideas that guided the creation of three color and lighting schemes in patients’ rooms.

Color Schemes

Literature shows color directly influences human behavior. Each color has a direct impact in creating quality of life environments for healthcare facilities. The information on color schemes was reviewed through literature for the selection of colors; which included warm colors of peach, tints and tones of yellow, and tints of green. Other proposed colors were shades, tones, and tints of blue and purple (Mahnke and Mahnke, 1993).

This project designed three hospice patient rooms all with different color schemes. Each color was researched as being appropriate for a patient’s quality of life and based on the literature review in chapter two. The three colors chosen were Summer Daffodil, Fresh Cut Grass, and Bay Shore, all by Dunn Edwards. Summer Daffodil is a soft natural tint of pure yellow. Yellow represents the brilliance of sunlight and gives patients a physical and mental sensation of warmth. Fresh Cut Grass is a natural shade of green, represents the freshness of trees and grass and creates an outdoor ambiance. Bay
Shore, a tone of blue, represents spirituality and denotes the coolness and clarity of the sky.

**Lighting Design**

The three types of lighting are incandescent, fluorescent, and high intensity discharge lamps. Literature states that a combination of these three creates a ‘natural’ light just as good as natural sunlight (Gordon, 2003). How a person feels can be affected by light, and artificial lighting can improve a patient’s quality of life.

This project used fluorescent recessed lighting, windows, and skylights. These three lighting types, suggested by literature, play the best role in hospice patient room environments (Gordon, 2003 & Linton, 1985). This combination of lighting creates artificial and natural lighting for each room. These lighting types are also ideal for enhancing the quality of life for patients and the work environment for the staff.

**Implications for the field of study**

The findings of this project suggest that color and lighting psychologies should be carefully considered when designing healthcare environments such as hospitals and hospices. There is a great deal of research on color and lighting psychologies that can be incorporated into these healthcare environments to ensure a better quality of life for patients. The implication of color and lighting choices for hospices can also be directly applied to other health related environments such as doctors’ offices, gyms, and physical therapy rooms. Finally, the findings can also be abstracted to all environments in which humans operate to ensure a healthier and better quality of life for all.
Summary

The purpose of this project was to develop a hospice design that considers evidence based color and lighting psychologies to improve patients’ quality of life. Elements of color and lighting both have a direct impact in creating quality of life environments for healthcare environments such as hospices. These elements can also be used in any environment in which humans work, live, and visit.
References

http://www.cancer.org/docroot/ETOcontent/Eto25xWhat_Is_Hospice_Care?


